

Translation from the Polish language

## THE PATENT OFFICE OF THE REPUBLIC OF POLAND

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### A CERTIFICATE

Advanced Digital Broadcast Ltd.,  
Hsin-Tien City, Taiwan

Advanced Digital Broadcast Polska Sp.z o.o.,  
Zielona Góra, Poland

on December 30<sup>th</sup> 2002 submitted to the Patent Office of the Republic of Poland an  
application for granting a patent for an invention called „ **A device for controlling decoder  
extension cards and universal extension cards**”

The description of the invention, the patent claims and the drawings, which were attached to  
this certificate, are true copies of the documents, which were submitted together with the  
application on December 30<sup>th</sup> 2002.

The application was submitted under the following number: P-358050.

Warsaw, as of October 28<sup>th</sup>, 2003





on behalf of the President  
Barbara Zabczyk  
/-/ illegible signature  
Head of the Department

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of the Republic of Poland in the middle and the following contents in the rim: /*

**PATENT OFFICE OF THE REPUBLIC OF POLAND**

**\* 1 \***

*/page 2/*

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national emblem of the Republic of Poland in the middle and the following contents in the  
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**PATENT OFFICE OF THE REPUBLIC OF POLAND**

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## **A device for controlling decoder extension cards and universal extension cards**

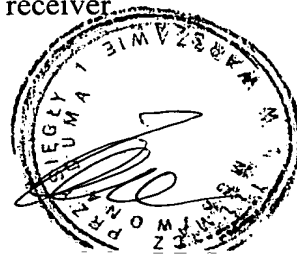
The object of the invention is a device for handling decoder extension cards and universal extension cards, which enables to service simultaneously decoder extension cards and universal extension cards.

The known devices for controlling decoder extension cards (CI type cards – Common Interface Specification for Conditional Access and other Digital Video Broadcasting Decoder Application) or universal extension cards (cards of PCMCIA – Personal Computer Memory Card International Association) are equipped with a slot (pocket) of card reader, which is linked to the processor and the control circuit.

The essence of the device for controlling decoder extension cards and universal extension cards, according to the invention, is based on that a receiver, which by means of the control circuit is linked with the processor, with a select circuit and a card reader, linked with a power supply circuit. Three buffers are coupled with the card reader, while the card reader, via the first buffer and the second buffer is linked with the processor and via the third buffer is linked with the control circuit.

It is favorable that the select circuit incorporates four input terminals, out of which the input terminal of the control signal is linked with the input of multiplexer, while each of the remaining three input terminals of the control signals is linked with the input of one of three inverters, while their outputs are linked with NAND elements, the outputs of which are linked with the input of one of the multiplexers, controlled by the signal, generated by the processor.

The essence of the second alteration of the device, according to the invention, is based on that it has the first card reader with the power supply circuit and the second card reader with the power supply circuit and that it has a processor, which is connected via a control bus and 8-bit data bus with the control circuit, the input of which is connected with the receiver.



The processor is linked with the first control circuit and with the second control circuit and via the

2

first buffer for the first card reader and the second buffer for the first card reader with the first card reader. It is linked with the second card reader via the first buffer for the second card reader and the second buffer for the second card reader. It is linked with the control circuit via the third buffer for the first card reader, linked with the first card reader, and via the third buffer for the second card reader it is linked with the second card reader.

The device for controlling decoder extension cards and universal extension cards, according to the invention, ensures simultaneous processing of television signals with the use of decoder extension cards and controlling of universal extension cards.

The object of the invention, in the examples of embodiment, is illustrated in the drawing, in which fig. 1 shows a block diagram of the device for controlling decoder extension cards and universal extension cards with one card reader, fig. 2 – a block diagram of the select circuit, fig. 3 – waveform of impulses on inputs and outputs of the select circuit, fig. 4 – a network of actions for the device for controlling decoder extension cards and universal extension cards with one card reader, illustrated in fig. 1, fig. 5 – a block diagram of the device for controlling decoder extension cards and universal extension cards with two card readers.

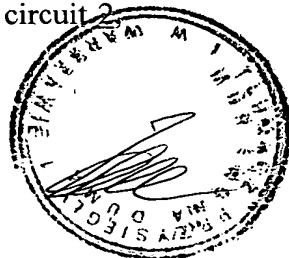
According to the first example of the embodiment of the device for controlling decoder extension cards and universal extension cards with one card reader, according to the invention, is characterized in that the receiver 1 of the scrambled digital television signal is linked with processor 3 via the control circuit 2, with the select circuit 4 and with the card reader 9, which is linked with the power supply circuit 8. Three buffers are linked with the card reader 9, while the card reader 9, via the first buffer 5 and the second buffer 6



is linked with the processor 3, whereas via the third buffer 7 it is linked with the control circuit 2. The first buffer 5 and the second buffer 6 is a bidirectional line transmitter/receiver, while the third buffer 7 is a unidirectional line transmitter/receiver.

Receiver 1 receives a scrambled digital television signal. From receiver 1, via 8-bit data bus TS CI 0-7, the signal is transmitted to the control circuit 2. It controls data transfer between the receiver 1, the processor 3, select circuit 4 and card reader 9. Signal P, generated by the processor 3, takes the logical value 0 for the decoder extension card and logical value 1 for universal extension card. The following are controlled by signal P: select circuit 4, the second buffer 6 and the third buffer 7. Moreover signal P impacts the value of control signals CE1# and CE2#, which are used to read data from the card 10, placed in the card reader 9.

The second example of the embodiment of the device for controlling decoder extension cards and universal extension cards, according to the invention, is characterized in that it has the first card reader 9A with the power supply circuit 8A and the second card reader 9B with the power supply circuit 8B and has the processor 3AB, which is connected via control bus 11 and 8-bit data bus TS 0-7 with control circuit 2, the input of which is linked to the receiver 1. The processor 3AB is linked with the first select circuit 4A controlled by the signal P<sub>A</sub> and with the second select circuit 4B controlled by the signal P<sub>B</sub> and via the first buffer for the first card reader 5A and the second buffer for the first card reader 6A, with the first card reader 9A, and via the first buffer for the second card reader 5B and the second buffer for the second card reader 6B, with the second card reader 9B. The control circuit 2



via the third buffer for the first card reader 7A, is linked with the first card reader 9A, and via the third buffer for the second card reader 7B, it is linked with the second card reader 9B.

4

Although the device for controlling decoder extension cards and universal extension cards was depicted in relation to two slots (pockets), it is also suitable to extend the capabilities of digital television receivers by means of equipping them with more than two slots (two pockets).

The above given detailed descriptions of the separate functional structures of the device for controlling decoder extension cards and universal extension card, according to the invention, should not be interpreted as limiting the idea of the invention to the alterations of the described devices, and for an expert in the field of reception of coded television signals it is obvious that the described alterations of the devices can be subjected to many modifications, adjustments or equal embodiments, which will not be too far from their technical character and will not lead to diminishing the technical effects, achieved by them. Thus the above description of the invention should not be interpreted as limited to revealing the examples of embodiments and definition of the alterations of the device by the patent claims.

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Bogdan Rokicki, MA  
Patent Attorney  
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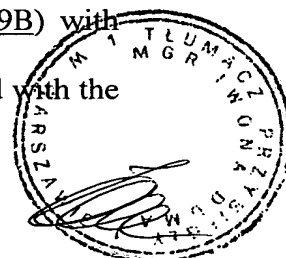
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### PATENT CLAIMS

1. A device for controlling decoder extension cards and universal extension cards, comprising a card reader, control circuit and a processor, characterized in that the receiver (1) is connected via the control circuit (2) with the processor (2), select circuit (4) and a card reader (9) connected with a power supply circuit (8), and to the card reader (9) three buffers are connected, where the card reader (9) is connected via the first buffer (5) and the second buffer (6) with the processor, and via the third buffer (7) with the control circuit (2).
2. A device according to claim 1, characterized in that, the select circuit (4) incorporates four input terminals, out of which the input terminal of the control signal (CE2) is connected with the input of the multiplexer (27), while each of the remaining three input terminals of control signals (BE1, BE2, CE1) is linked with the input of one of the three inverters (21, 22, 23), while their outputs are linked with NAND elements (24, 25), the outputs of which are linked to the input of one of the multiplexers (26, 27) controlled by the signal (P) generated by the processor (3).
3. A device for controlling decoder extension cards and universal extension cards incorporating a control circuit and a processor, characterized in that it has the first card reader (9A) with power supply circuit (8A) and the second card reader (9B) with power supply circuit (8B) and that it has the processor (3AB), which is linked with the



control circuit (2), the input of which is linked to the receiver (1). The processor (3AB) is connected with the first select circuit (4A), controlled by the signal (P<sub>A</sub>) and with the second select circuit (4B), controlled by the signal (P<sub>B</sub>), and via the first buffer for the first card reader (5A), and the second buffer for the first card reader (6A) with the first card reader (9A), and via the first buffer for the second card reader (5B), and the second buffer for the second card reader (6B), with the second card reader (9B), and control circuit (2), via the third buffer for the first card reader (7A), is linked with the first card reader (9A), and via the third buffer for the second card reader (7B), is linked with the second card reader (9B).

4. A device, according to claim 3, characterized in that, the select circuit (4A, 4B) incorporates four input terminals, out of which the input terminal of the control signal (CE2) is linked with the input of the multiplexer (27), while each of the remaining three input terminals of control signals (BE1, BE2, CE1) is linked with the input of one of the three inverters (21, 22, 23), while their outputs are linked with the NAND elements (24, 25), the outputs of which are linked with the input of one of the multiplexers (26, 27) controlled by the signal (P<sub>A</sub>, P<sub>B</sub>) generated by the processor (3AB).

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Bogdan Rokicki, MA  
Patent Attorney

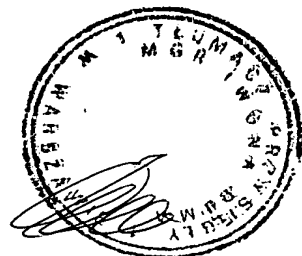
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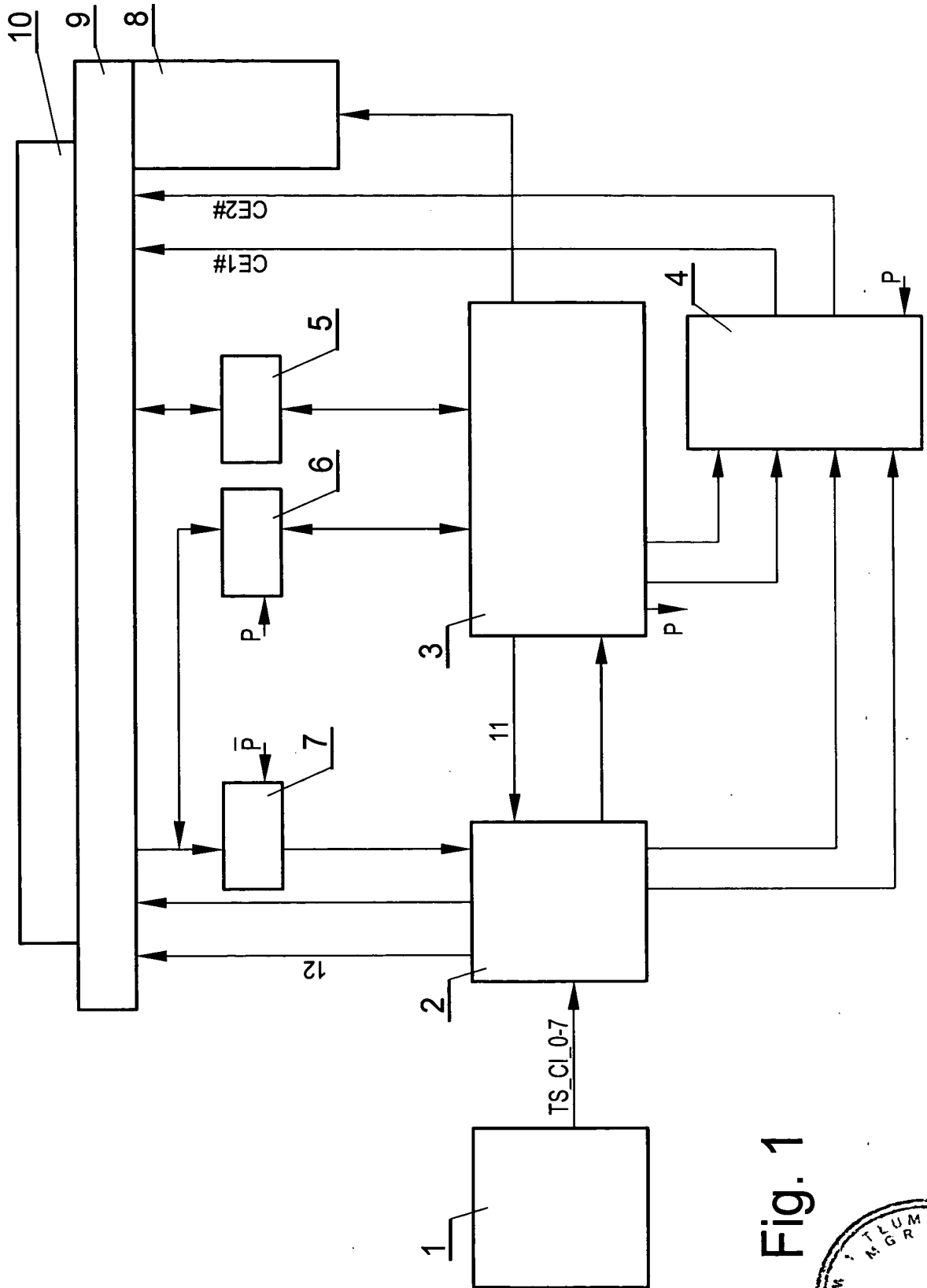


Fig. 1



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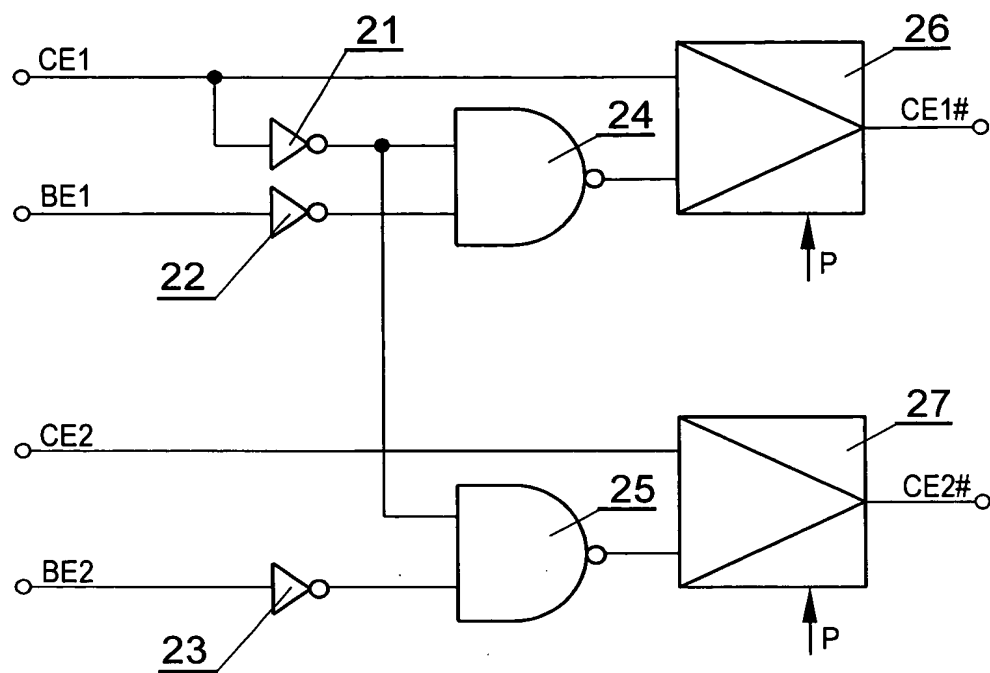


Fig. 2

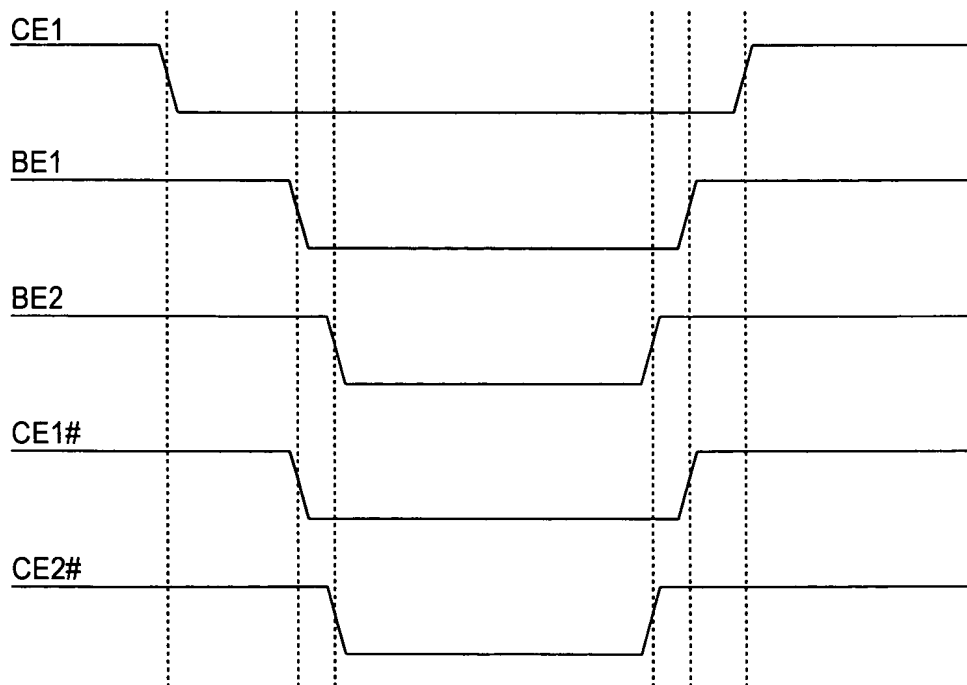


Fig. 3



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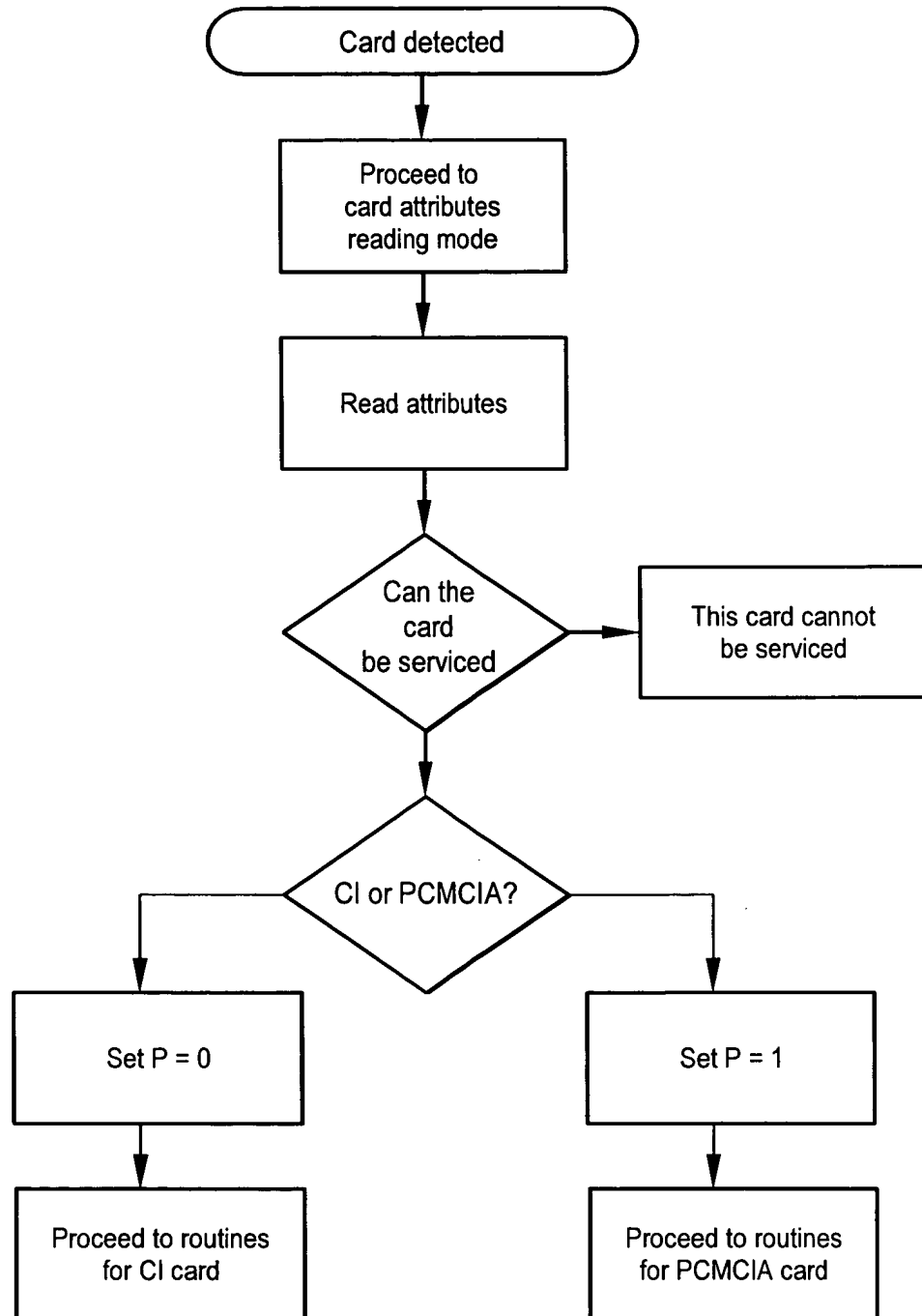


Fig. 4



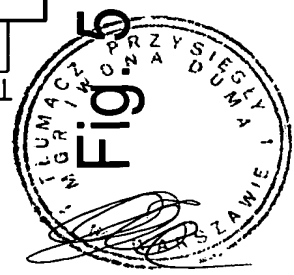
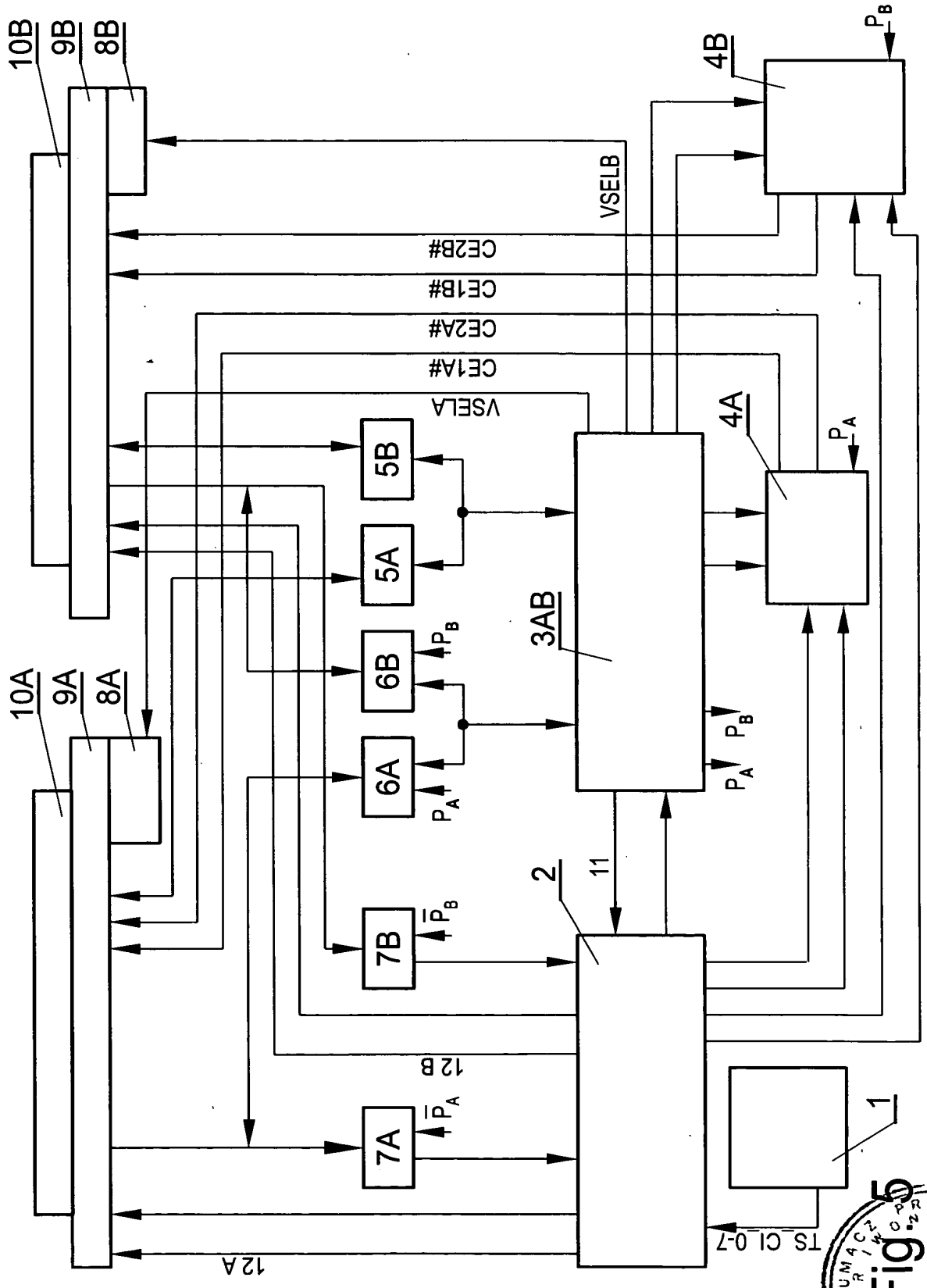


Fig. 5

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**Repertory No.: 703/11/2003**

*I, the undersigned, Iwona Duma, sworn translator of the English language for the District Court of the City of Warsaw, hereby certify that the above text is a true and complete translation of the original Polish document.*

*Warsaw, November 25, 2003*

